

REMARKS

Upon entry of the foregoing amendment, claims 1-21 and 52-80 are pending in the application. Claims 22-51 were withdrawn by the Examiner under 37 C.F.R. § 1.142(b) as being directed to a non-elected invention and have been canceled without prejudice to, or disclaimer of, the material recited therein. Claims 1-21 and 52-80 stand rejected under 35 U.S.C. § 112, first and second paragraphs. The amended claims are claims 1, 19, 52 and 63. Support for the amendment to claims 1, 52 and 63 is provided by the specification at Example 1, pages 55-59, and the Appendix, showing the sequence of a vector of the invention (SEQ ID NO:1), where a plurality of the codons that encode amino acids 2-10 of the transposase gene are individually modified from the wild-type sequence of cytosine or guanine at the third base position of the codon to an adenine or a thymine, such that the modification does not change the amino acid encoding the modified codon. Claim 19 is amended to improve the syntax of the claim. Accordingly, no new matter is added by the amendment of the claims.

Interview Summary

A telephone interview was held between the Examiner and Applicants' representative, Cynthia Rothschild, on February 6, 2007. Applicants' representative asked for clarification of the rejections made in the office action. The Examiner stated that the term "a plurality of the first ten codons of the transposase gene" as recited in independent claims 1, 52, and 63, did not exclude the first codon. It was suggested that Applicants make amendments to clarify that the modification of the codons is limited to the codons that encode for amino acids 2-10 of the transposase protein, such that codon 1 must be excluded. The Applicants and Applicants' representative thank the Examiner for taking the time to clarify these issues.

Objections to the Claims

Claims 1, 52, and 63 were objected to as not reciting the limitation in the correct syntax. The Examiner stated that recitation of step (a) in each of the claims should be amended to change "encoded" to "encoding". Applicants have not used the suggested term "encoding," but instead have amended the claims to clarify that the amino acid is

“encoded by” the codon, as amino acids do not encode for codons, but are “encoded by” nucleotide codons. Applicants respectfully assert that as amended, the claims have the correct syntax, and request that the objection be withdrawn.

The Rejection of the Claims Under 35 U.S.C. § 112, First Paragraph, Is Traversed Or Rendered Moot

A. Written Description

The Examiner rejected claims 1-21, 52-72 and 73-80 as failing to comply with the written description and enablement requirements. The Examiner stated that:

[U]pon further review of the instant specification, examiner could only find support for codons for the first ten amino acids of the transposase gene wherein G or C is changed to A or T without altering the amino acid encoded by the modified transposase (see page 58). Since as amended claims require one or all the first ten codons to be individually modified which is not optional rather it is required to be an A or T at third base position of first ten codons. It is emphasized that specification provides support directly to codons for the first ten amino acids of the transposase and not to the plurality of first ten codons (30 amino acids) as contemplated by the claims.

...

[I]t appears that the claims reflect modifying one or all of first ten codons at third base position of each of the codon, not for codons for first ten amino acid as described in the specification. In addition, as recited modification of one or all the ten codons appears not an option rather it is required without changing the amino acid encoding the modified transposase. It is noted that the first codon ATG of the wild type transposase as changed to AAT or ATA would make the transposase non-functional.

Office Action at pages 3-4. Applicants respectfully assert that the previous amendment, reciting that ”a plurality of the first ten codons of the transposase gene are individually modified from the wild-type sequence at the third base position of the codon to an adenine or thymine at the third base position of the codon, such that the modification does **not** change the amino acid encoding the modified codon” (emphasis added) inherently excluded those codons that could not be modified without changing the amino acid encoded by the codon. Thus, Applicants previous amendment did not require that the first codon ATG be modified, but in fact precluded such a modification as this modification does not fall within the limitation. Still, to facilitate prosecution,

Applicants have amended the claim to specifically state that the transposase gene is modified such that a plurality (i.e., more than one, but not necessarily all) of the codons of the transposase gene that encode for amino acids 2-10 of the transposase protein are individually modified from the wild-type sequence of cytosine or guanine at the third base position of the codon to an adenine or a thymine, such that the modification does not change the amino acid encoding the modified codon. Thus, as amended, the claims are supported by the specification at Example 1 (pages 55-59), and the Appendix, showing the sequence of a vector of the invention (SEQ ID NO:1) where the codons that encode amino acids 2-10 of the transposase gene are individually modified from the wild-type sequence of cytosine or guanine at the third base position of the codon to an adenine or a thymine, such that the modification does not change the amino acid encoding the modified codon.

2. Enablement

The Examiner also rejected the claims as not enabled under 35 U.S.C. § 112, first paragraph, in that the amended claims “require modification in one or all ten codons of the transposase gene” and the specification does not enable changing the sequence of the first codon ATG to ATA or ATT, without changing the function of the first codon as a start codon and a Kozak sequence. Office Action at page 6. Applicants respectfully assert that the phrase “a plurality of the first ten codons” as previously recited does not require that one or all ten codons of the transposase gene be modified, but that more than one, but not necessarily all, of the first ten codons, are modified. Still, to facilitate prosecution, Applicants have amended the claim to specifically state that the transposase gene is modified such that a plurality (i.e., more than one, but not necessarily all) of the codons of the transposase gene that encode for amino acids 2-10 of the transposase protein are individually modified from the wild-type sequence of cytosine or guanine at the third base position of the codon to an adenine or a thymine, such that the modification does not change the amino acid encoding the modified codon. As amended, the claims do not encompass changing the first codon of the transposase gene (i.e., ATG), to either ATA or ATT.

For at least these reasons, Applicants respectfully assert that the amended claims are fully described and enabled by the specification, and request that the rejection be withdrawn.

The Rejection of the Claims Under 35 U.S.C. § 112, Second Paragraph, Is Traversed Or Rendered Moot

Claims 1-21 and 52-80 were also rejected under 35 U.S.C. 112, second paragraph, as being indefinite for reciting a promoter that comprises a Kozak sequence ACCATG being positioned so as to include at least the first codon of the transposase gene wherein the transposase gene is modified such that a plurality of the first ten codons of the transposase gene are modified to include A or T at the third base. The Examiner asserted that the limitation required modification of the first codon of the transposase gene, and that such a modification would essentially alter the function of the Kozak sequence as well as the amino acid encoded by the codon. The Examiner also stated that claims 52 and 63, which recited that each of the codons that encode for amino acids 2-10 of the transposase gene comprise an A or T at the third position, were contradictory to the limitation as recited in claim 1, which recited that a plurality of the codons are modified, and included the embodiment where ATG is modified. Office Action at pages 7-8.

Applicants respectfully assert that the claims as previously amended were not indefinite, since modification of the first codon ATG did not fall within the limitation, because the codon could not be modified without changing the amino acid encoded by the codon. Still, to facilitate prosecution, Applicants have amended the claims to clarify that only codons that encode for amino acids 2-10 are modified from the wild-type sequence. As amended, the claims do not encompass changing the first codon of the transposase gene (i.e., ATG), to either ATA or ATT.

Regarding claims 52 and 63, Applicants respectfully assert that claim 1 recites a vector in which a plurality (i.e., more than one, but not necessarily all) of the codons that encode for amino acids 2-10 of the transposase gene have been modified so that the modified codons have A or T at the third position. Claims 52 and 63 further limit the vector as having a plurality (i.e., more than one) the codons that encode for amino acids 2-10 of the transposase gene modified so that each of the codons that encode for amino

acids 2-10 of the transposase gene have A or T at the third position. Claim 1 does not require that each of the codons that encode for amino acids 2-10 have an A or a T at the third position.

Thus, Applicants respectfully assert that the claims are not indefinite under 35 U.S.C. 112, second paragraph, and respectfully request that the rejection be withdrawn.

CONCLUSION

In view of the foregoing amendment and remarks, each of the claims remaining in the application is in condition for immediate allowance. Accordingly, the Examiner is respectfully requested to reconsider and withdraw the outstanding rejections. The Examiner is respectfully invited to telephone the undersigned at (336) 747-7541 to discuss any questions relating to the application.

Respectfully submitted,

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